

**Amendments to the Specification:**

Please amend the paragraph beginning at page 8, line 11 of the specification as follows:

For the solid electrolyte membrane 20, ~~Nafion NAFION~~ 111 (Dupont®) made from perfluorocarbon sulfonic acid is used. The specification of ~~Nafion NAFION~~ 111 is membrane thickness 30 microns ( $\mu\text{m}$ ), specific heat 0.86 Joules per gram-absolute temperature (J/g-K) and density 1.8 grams/cubic centimeter ( $\text{g}/\text{cm}^3$ ).

Please amend the paragraph beginning at page 11, line 5 of the specification as follows:

The solid electrolyte membrane 20 using ~~Nafion NAFION~~ 111 perfluorosulfonic acid polymer having a film thickness of 30  $\mu\text{m}$  can absorb 0.35  $\text{mg}/\text{cm}^2$  of moisture. The solid electrolyte membrane 20 using ~~Nafion NAFION~~ 117 of film thickness 175  $\mu\text{m}$  can absorb 2.1  $\text{mg}/\text{cm}^2$  of moisture. Hence, firstly for the end cells 2b, the film thickness of the solid electrolyte membrane 20 is made larger than that for the center cells 2a. For example, the moisture absorption capacity of the cells 2b can be made larger than the moisture absorption capacity of the cells 2a by using ~~Nafion NAFION~~ n 111 for the cells 2a, and using ~~Nafion NAFION~~ 117 for the cells 2b.

Please amend the paragraph beginning at page 12, line 14 of the specification as follows:

By using ~~Dowex DOWEX~~ perfluorosulfonic acid polymer having an *EW* of 800 instead of the ~~Nafion NAFION~~ film having an ion exchange group equivalent weight *EW* for the solid electrolyte membrane 20, approximately 1.5 times the amount of moisture can be absorbed. If the ion exchange group equivalent weight *EW* is small, the number of moles of ion exchange groups increases, so the moisture absorption capacity is enhanced. If the thickness of the solid

electrolyte membrane 20 is 30  $\mu\text{m}$ , the ~~Dowex~~ DOWEX® film can absorb 0.53 mg/cm<sup>2</sup> of moisture. This is approximately 0.18 mg/cm<sup>2</sup> more than a film of ~~Nafion~~ NAFION 112 of identical thickness. However, if the ion exchange group equivalent weight *EW* becomes small, the film strength decreases. In order to maintain a desirable film strength, the iron exchange group equivalent weight *EW* is preferably 200 or more.

Please amend the paragraph beginning at page 14, line 8 of the specification as follows:

When the MEA 3 contains approximately 0.5 mg/cm<sup>2</sup> of ~~Nafion~~ NAFION®, it can absorb 0.02 mg/cm<sup>2</sup> of moisture. This can be implemented by coating a catalyst containing ~~Nafion~~ NAFION® to the catalyst layer 21. If a ~~Nafion~~ NAFION® solution is also coated on the gas diffusion layer 22, the MEA 3 can hold approximately 50 gm/cm<sup>2</sup> of ~~Nafion~~ NAFION®, and can therefore absorb 2 mg/cm<sup>2</sup> of moisture. Hence, the polymer solution having a perfluorocarbon sulfonic acid as its main starting material has moisture-absorbing ability.

Please amend the paragraph beginning at page 25, line 18 of the specification as follows:

In this embodiment, ~~Nafion~~ NAFION 111 having a film thickness of 30  $\mu\text{m}$  is used for the solid electrolyte membrane 20 of the center cells 2a, and ~~Nafion~~ NAFION 112 having a film thickness of 50  $\mu\text{m}$  is used for the end cells 2b. Carbon paper of thickness 200  $\mu\text{m}$  is used for the gas diffusion layer 22 of the center cells 2a, and carbon paper of thickness 300  $\mu\text{m}$  is used to the gas diffusion layer 22 of the end cells. Moisture repelling treatment is given to the carbon paper. To enhance the moisture removal properties of the end cells 2b, the amount of moisture repelling material in the end cells 2b is preferably arranged to be larger than that of the center cells 2a. Further, the diameter of the pores in the carbon paper used in the end cells 2b is

preferably arranged to be larger than the diameter of the pores in the carbon paper used in the center cells 2a. For this purpose, instead of the carbon paper in the end cells 2b, carbon cloth could be used.

Please amend the paragraphs beginning at page 26, line 7 of the specification as follows:

As a method of increasing the moisture absorption capacity, the contact angle between the gas diffusion layer 22 and moisture is preferably increased. Specifically, this is done by forming fine irregularities in the surface of the carbon paper forming the gas diffusion layer 22. More specifically, when the carbon paper is given a moisture-repellant treatment, the surface of the carbon paper is roughened by mixing a fluorine compound such as polytetrafluoroethylene (Teflon TEFLON®) and silicon oxide ( $\text{SiO}_2$ ) particles.

As another method of increasing the contact angle between the gas diffusion layer 22 and moisture, the hydrophilic properties/moisture-repelling properties of the diffusion layer 22 may also be varied. In the case of Teflon TEFLON, the contact angle is 108 degrees, but poly perfluorooctylethylacrylate which has been given a higher fluorine concentration has a contact angle of 120 degrees. Whereas the fluorine in Teflon TEFLON is bonded in the form of  $-\text{CF}_2-$   $\text{CF}_2-$ , perfluorooctylethyl acrylate has the side chains  $-\text{CF}_2-\text{CF}(\text{CF}_3)-$ , so the fluorine concentration is higher.